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DOMINION POST Monday 1 August 2011:

Gas industry boom, gloom and doom

Pa., W.Va. reports analyze impact on states' futures

*BY DAVID BEARD
The Dominion Post*

More jobs, more spending, more tax revenue. Those are the buzz words of the Marcellus boom — the bright side of the broken roads, alarmed environmentalists, distressed surface owners. A new Penn State study funded by the Marcellus Shale Coalition paints a rosy and robust future for the gas industry's contribution to Pennsylvania's economy. But across the border in West Virginia, the independent West Virginia Center on Budget & Policy paints a more gloomy picture drawn from the boom and bust cycles of the coal economy. Amid the gloom, it makes a suggestion to capitalize on any windfall — a suggestion echoed by some state office holders.

The Penn State report

Three professors from Penn State's Department of Energy and Mineral Engineering conducted the study sponsored by the coalition — an industry organization devoted to "responsible development" of the Marcellus gas play and to economic enhancement. This was the team's third annual Marcellus study. Active wells soared from 280 in 2008 to 1,055 by the end of 2010, the study says. Pennsylvania state and local taxes from Marcellus operations nearly doubled in just a year — from \$573 million in 2009 to \$1.09 billion in 2010. It projects \$1.23 billion this year, soaring to \$2 billion by 2020. Marcellus-based employment — in the industry and in other occupations benefitting from the stimulus — more than doubled, from 60,168 jobs in 2009 to 139,889 in 2010. That should grow to 156,695 jobs this year and to 256,420 by 2020. The net economic impact — called "value added" — to the state's economy likewise more than doubled, from \$4.7 billion in 2009 to \$11.16 billion in 2010. That's projected to grow to \$12.84 billion this year and reach \$20.24 billion by 2020. The net economic impact takes into account three types of spending: Direct: Money spent in developing the gas play, \$5.33 billion in 2010; Indirect: subsequent spending and re-spending by other companies on goods and services, \$2.38 billion; and induced, household spending spurred by increased income, \$3.45 billion (figures don't add up perfectly due to rounding). Here are some other highlights from the study: Pennsylvania is selfsufficient in its natural gas needs and will likely become an exporter to other states. The Pennsylvania gas industry faces higher development costs because of regulations, topography and other issues, but also enjoys higher wholesale prices. Although production from horizontal wells drops steeply after an initial high output, "the sheer geographical size of the Marcellus supports significantly higher levels of drilling": 2,500 Pennsylvania wells by 2020; 3,500 if prices rise from their present low level. Price hikes, though, are unlikely as supply continues to grow. Pennsylvania, like much of West Virginia, has "wet" gas — containing ethane, propane and butane along with the methane. The additional compounds also have commercial value. Ethane, for instance, is a key ingredient in various plastics. The Marcellus boom has helped keep natural gas and electricity prices from escalating. Low gas prices saved all Pennsylvania consumers about \$633 million in 2010. Residential customers saved about \$217.4 million on their gas bills and \$27.7 million on their electric bills. The coalition was pleased with the study, it said in a release. "The analysis underscores how far-reaching, genuine and sustained the growth is associated with Marcellus shale natural gas production, particularly for Pennsylvania consumers and taxpayers, as well as local small businesses along the supply chain that support the industry."

The Budget & Policy report

The Center on Budget & Policy describes itself as nonpartisan, though many have observed that its reports and analyses show a liberal leaning.

Its July report is called "Booms and Busts: The Impact of West Virginia's Energy Economy."

The report observes that West Virginia, with its abundant fossil fuel resources, is an energy state, with about 11 percent — \$7.2 billion — of its gross state product coming from extraction industries.

And that's not necessarily a good thing, it says. "Natural resource extraction tends to lead to economic boom and bust cycles. ... Since the state is so dependent upon natural resources, this pattern of booms and busts causes volatility in revenue streams, leaving communities vulnerable, underdeveloped and less economically secure."

It uses the woes of coal to predict what might follow from the Marcellus boom.

Marcellus permits skyrocketed from one in 2002 to more than 800 in 2008. There are now more than 1,200 Marcellus drilling sites in the state. "As with coal, many proponents of natural gas drilling point to this activity as a path to, and source of, economic growth."

But here's what happened in 14 "mining counties," where mining makes up more than 14 percent of private sector jobs:

They're behind in earnings. Real earnings grew by 177 percent across the state since 1969, but only 144 percent in mining counties.

While mining county economies outpaced those of the other 41 in the 1970s boom, they fell harder and faster during the 1980s bust and still lag. "If trends hold, the boom ultimately leads to a bust, followed by decades of underperformance."

Median household incomes are lower in mining counties — \$30,655 compared to \$37,356 statewide.

Family poverty rates are higher — 18.6 percent compared to 13.2 percent.

Various health factors are lower in mining counties.

Mining counties lack economic diversity, making them more subject to the boom-bust cycle and less able to recover.

Mining counties have

lower education levels: With mining jobs available, young workers don't seek more education.

Mining is playing a

shrinking economic role in the state and the nation. West Virginia's share of the national mining economy dipped from almost 10 percent in 1972 to 5.5 percent in 2009.

The center's conclusion: "While the present and future impact of natural gas drilling remains uncertain, there will certainly be an initial boom in economic activity. However, positive long-term economic growth will come only from a diverse economy with a highly educated workforce."

The center recommends a solution also floated by several others this spring and still at the forefront of many people's minds.

Different people call them different things, although they reflect the same principle. The center calls it a Permanent Mineral Trust Fund financed by severance taxes. Interest income could be used to pay for such things as child care, higher education, technical infrastructure, renewable energy and entrepreneurship grants.

In June, Jill Kriesky, a center economist — but not one of the study's authors — suggested that a 1-percent severance tax hike on coal, oil and gas extraction and production could raise \$100 million in its first year. The fund could have a principal balance of \$612 million by 2015, \$1.18 billion by 2020 and \$3.77 billion by 2035. The state's entire general fund is just over \$4 billion now.

The current severance tax is 5 percent and raised \$400.5 million in fiscal year 2010, according to Revenue Department figures.

Secretary of State Natalie Tennant had proposed the Innovation 2020 Fund to benefit education, local economic development and several other areas.

Acting Senate President Jeff Kessler proposed the West Virginia Future Fund, using 25 percent of the severance tax collected from natural gas extraction and production. The fund would go untouched for 20 years, and would then be used for tax relief, education and economic diversification.

He prefers his version to Kriesky's he said, because it doesn't raise taxes or divert existing income to new projects. It uses a new pool of money derived from anticipated expanded Marcellus production, making it that much easier to set aside and save.

LETTERS TO THE EDITOR

MAIL LETTERS to the editor to: The Dominion Post; 1251 Earl L. Core Road; Morgantown, WV 26505. Email letters to: opinion@dominionpost.com. Include your name and phone number for confirmation purposes. Letters should not exceed 300 words.

Show some character in Marcellus debate

Good character is the foundation of good leadership. If the foundation is flawed, there goes leadership.

The state of West Virginia must show a flawless foundation to lead in the Marcellus shale debate. This includes the citizens as well as elected leaders. We must take the country roads of compromise and cooperation to reach a destination that will work for all of us.

If we let this job-creating and self-sustainability type of energy opportunity pass by, we only have

ourselves to blame.

Yes, we must have agreements between the drilling companies and the state and property owners. This is what a contract does: It keeps everyone accountable for negligence. However, we must keep the atmosphere of “open for business.” We must not cut our noses off to spite our faces.

The Marcellus shale has created a modern-day gold rush to this area of the country and West Virginia is in the heart of it all. If you read real history, you will find that the gold rush of the 1800s created a vast amount of wealth for many individuals. This came at a time when the country had financial recessions, bank failures and widespread unemployment (sounds familiar). Each state within the Marcellus shale formation has its own supply of gold. West Virginia must pan out its differences with the drillers.

On behalf of the environmental activists, hurray that you are looking out for the streams and drinking water for all of us. Speaking as a fishing enthusiast, I will say you are doing a good job at keeping this issue at the forefront of the debate.

When I go to visit someone I wipe my feet before I go in. I take off my shoes at the door if it’s expected of me and I sure don’t put my feet up on their coffee table. I don’t view my privilege of being in someone else’s home as a free-for-all. I only invite people into my home that will respect my way of living, and not those who will take advantage of me. The drilling companies and property owners must have an “understanding.” In business the “understanding” comes in the form of a contract.

West Virginia is our home, not the federal Environmental Protection Agency’s, not the out-of-state drilling companies’. I say let’s create some mutual respect in this business venture that works for all of us.

Reba Frisenda Morgantown

Progress 2011 DOMINION POST Sunday 31 JulyY2K11:

<http://ee.dominionpost.com/Repository/ml.asp?Ref=RFBvc3QvMjAxMS8wNy8zMSNBcjA5MDAz&Mode=Gif&Locale=english-skin-custom>

W.Va. debates Marcellus gas

*BY DAVID BEARD
The Dominion Post*

The Marcellus shale natural gas boom — with all its potential benefits and all its associated problems — is in its infancy. It began in 2004 and is just now working its way across West Virginia. Legislators charged with regulating the industry are trying to play educational catch-up.

But the various elements that coalesced to form the boom are old.

Geologists say the Marcellus shale is about 390 million years old. It’s named for the town of Marcellus, N.Y., where it reaches the surface. Near Morgantown, it’s down 7,000 feet. It covers Pennsylvania, New York, most of West Virginia and bits of Ohio and Maryland.

Estimates for how much gas is in the Marcellus vary, but at 489 trillion cubic feet (tcf) it is the second largest in the world, and can serve U.S. needs for more than 20 years at current consumption levels.

Because the shale is densely packed, the natural gas inside it doesn’t release easily. That’s where the new combination of two fairly old technologies comes into play: horizontal drilling and hydraulic fracturing.

According to natural gas.org, the first patent for horizontal drilling was issued in 1891 to Robert E. Lee, son of the Civil War general. Technological developments in the past three decades have made it more commercially viable.

Hydraulic fracturing — fracking — stems back to 1903, while Halliburton made the first commercial applications in 1949.

Fracking allows drillers to break apart the dense rock to access the gas, and horizontal drilling allows them to access significant portions of the thin strata from a single bore. According to horizon taldrilling.org, a single horizontal well can produce three times as much gas as a vertical well. As many as six wells may be drilled on a single 5-acre pad.

Marcellus work is already under way in the local area. In early July, there were 13 active Marcellus permits in Monongalia County — one for a vertical well, 12 for horizontal wells. Permits are good for two years and may be in various stages of operation — from no activity at all, to drilling or fracking.

Two of those permits are subjects of a lawsuit: more on that shortly.

Preston County had 32 permits — 28 horizontal, four vertical; Marion County had 60 — 42 horizontal, 18 vertical.

The Marcellus boom brings with it promise and worry: Promise of a bright economic future, and worry about impacts on the environment and lifestyles.

Here are some of the bright spots, based on a report by the National Energy Technology Laboratory and WVU research:

Natural gas is a domestic energy resource: 84 percent of gas consumed in the U.S. is produced here; 97 percent in produced in North America. Around the world, natural gas comprises about 23 percent of the energy supply, and is expected to remain at about that level. The use of gas to generate power is

expected to double from 2005 to 2030.

The annual value of the gas produced in West Virginia is projected to grow from \$5 billion in 2010 to \$40 billion in 2020.

The annual West Virginia gross economic output from the Marcellus industry is projected to grow from \$1.161 billion in 2010 to \$2,896,000,000 in 2020. The "value added" to the economy (gross output minus capital and labor) should grow from \$658 million to more than \$1.6 billion.

Marcellus-related jobs in West Virginia are projected to grow from 5,998 in 2010 to 16,863 in 2020.

Tax revenues from West Virginia Marcellus activity are projected to climb from \$266 million in 2010 to \$872 million in 2020. This includes corporate income taxes, which should triple from \$104.3 million to \$369.78 million, and personal income taxes, which should nearly quadruple from \$25.71 million to \$92.26 million.

Natural gas contains by-products — ethane, propane and butane — that also have commercial value. The Legislature's "cracker bill," SB 465, provides incentives for developing ethane cracker facilities to serve the plastics industry.

But there are downsides. Stacie Griffith of Plum Run, Marion County, lives next to a Marcellus pad and put it this way: "It's been six years of awfully pure hell."

In Wetzel County, Bonnie Hall moved to Silver Hill from Maryland before Marcellus drilling began, and now wonders why she moved. "It looked like a good place to retire," she said. "Then all this happened. I can't believe I did this. This morning I was thinking, 'How did I end up in an industrial zone?'"

Some of the problems:

Potential water pollution. In 2009, the Pennsylvania DEP acknowledged the contamination of an aquifer serving the town of Dimock, in north-eastern Pennsylvania. Sources say the problem was caused by inadequately protected casings. The state has called on companies drilling in the Marcellus formation to stop taking wastewater to treatment plants, citing elevated levels of bromide in rivers in western Pennsylvania as reason. Bromide is a salt in drilling wastewater that is partially treated by sewer authorities and discharged into rivers that supply drinking water. It reacts with chlorine to produce a carcinogenic chemical, trihalomethane.

The fracking process is new, and the long-term effects are still unknown. New York has placed a moratorium on Marcellus drilling while the state studies the potential hazards.

Fracking fluid is 98 percent water. On average, about 80 percent remains deep underground, and about 20 percent is recovered and re-used or treated and released back into rivers or deep injection wells, depending on the company. But many are concerned about the remaining two percent: Sand to keep the fractured shale open to emit gas, lubricants, biocides and other ingredients. An April congressional study says 14 oil and gas companies used 750 chemicals in the frack fluids — some edible, some harmless, but some "extremely toxic."

While gas burns cleaner than coal, the drilling process burns plenty of diesel fuel: The trucks hauling water and equipment, the generators running the machines on the pads. Gas has to be compressed for transport through pipelines, and some worry that even with proper scrubbers, the natural-gas powered compressor engines can generate pollution. At a Morgantown town hall meeting, DEP secretary Randy Huffman admitted his agency has not taken the industry's aggregate effects on air quality into account.

In many cases, surface owners don't own rights to the gas, and have little recourse when the mineral owners or leaseholders want to come onto their land to drill. Legislators and surface owner advocates are working to include a variety of surface owner protections into new legislation.

Roads get destroyed. The volume of heavy truck traffic on secondary roads leads to ruts, potholes and sometimes total deterioration of the paved surface. The state Division of Highways issued a new Oil and Gas Road Policy in February, dealing with bonding and road damage repairs.

In north-central West Virginia and across the state, the Marcellus situation changes from week-to-week and sometimes day to day.

As of press time:

Northeast Natural Energy and property owner Enrout Properties LLC are suing Morgantown over its ban on fracking within a mile of city limits. That one-mile circle takes in Northeast's two wells in the Morgantown Industrial Park. Judge Susan Tucker has the case. Northeast said it has spent more than \$7 million on the project and spends between \$50,000 and \$85,000 daily on the operation. It plans to frack the wells in September. In the suit, plaintiffs ask the court, among other things, to bar the city from enforcing its ban; and declare the city ordinance pre-empted by state law and an unconstitutional violation of due process in denying them their property rights.

Plaintiffs are also seeking a preliminary injunction to prevent enforcement of the ban pending the court's ruling on a permanent injunction. A hearing has been set for Aug. 17-19.

The company has said if the ban is upheld, it plans to seek millions for the unlawful taking of its property rights. In court documents, Northeast asks Morgantown how it would pay for more than \$40 million in compensation and what services might be affected if it is forced to pay.

A 10-member House-Senate select committee is working on a comprehensive bill to regulate the Marcellus industry. It heard testimony from various stakeholders and experts during two days of meetings in July, and plans three days of meetings during the Aug. 1-3 interims. House committee members held three public hearings in late July. If and when a bill is complete and the two chambers informally agree on it, acting Gov. Early Ray Tomblin said he is open to calling a special session to pass the bill.

In the absence of regulation, Tomblin in mid-July issued an executive order directing the DEP to put in place emergency rules to govern Marcellus activities. Once enacted, the rules will be in effect for up to 15 months, until the Legislature passes a bill. Tomblin's directives focus on environmental issues and don't address such things as roads or surface owner rights. Nonetheless, legislators, industry officials and environmental advocates praised the order as a good first step in regulating the industry.

Editorial:

Dry hole: A drilling ban has no place in the city charter
Sunday, July 31, 2011
Pittsburgh Post-Gazette

Pittsburgh City Council has plenty of opportunities to make political statements. It doesn't need to mess with the city's Home Rule Charter to do that.

Councilman Doug Shields wants to put a referendum on the November ballot asking voters to change the charter to bolster a ban against Marcellus Shale drilling inside the city's borders. The prohibition already exists as an ordinance that was adopted last year, but Mr. Shields wants it in the charter as well, to make it more difficult for future councils to rescind the ban.

He believes an overwhelming "yes" vote on a ban would send a loud message to local politicians, warning them that speaking in favor of the controversial drilling industry would mean kissing their political futures goodbye. That presumes facts not in evidence.

First, it assumes that voters favor a ban. Anyone who has attended a public meeting, listened to a radio talk show or read the letters to the editor on this page knows there is anything but unanimity of opinion on Marcellus Shale drilling.

Second, it suggests that even those who favor a ban want to see it included in the city's guiding document. Further, there is little to suggest having a ban in the charter would provide more insulation against a legal challenge.

The Post-Gazette did not favor the ban in the first place, preferring tough yet sensible restrictions on the industry instead. Amending the charter would be a greater mistake.

The city charter, adopted by voters in 1974, lays out the authority of elected officials, sets up advisory boards and specifies personnel rules and procedures for budget adoption, bidding requirements and tax collection. It is not a series of prohibitions and permits covering specific activities. A ban on gas drilling has no place in a document that is essentially a constitution.

Mr. Shields and colleagues Darlene Harris, Bruce Kraus, Bill Peduto and Natalia Rudiak made the wrong call in advancing legislation to put the question to voters. They can undo it by voting against the measure on Monday.

First published on July 31, 2011 at 12:00 am

Op-Ed Charleston Gazette Monday 1 August 2011:

July 31, 2011

By Lawrence T. Beckerle: A better way to regulate Marcellus gas drilling

Hydraulic fracturing ("fracking") in the Marcellus shale has increased questions about regulations on gas drilling. Is there a better way? For a reasonable debate, participants need to understand "rule of capture" and "pooling."

Rule of Capture

Rule of capture is similar to hunting. If you kill a deer on your property, it's yours to keep. Even if the deer spent all of its life on your neighbor's property until the first day of hunting season, it's still your deer. Your neighbor gets nothing.

A landowner gets payment for all the gas from the well on his property. It doesn't matter where the gas came from. If other landowners want to capture their share of the gas, they have to get a gas well drilled on their property. When enough neighbors try to get their share, the gas field is depressurized and everybody ends up with non-producing wells. Microbes are continually producing gas in some formations, so it's possible for pressure to return, if the wells are sealed for a time that varies according to the formation. If one or more wells are not properly sealed off, the gas leaks off into the atmosphere, contributing to loss of potential revenue for the landowners as well as contributing to global warming. Perhaps a fund should be established for sealing old wells.

Pooling

Underground gas and oil tend to rise above saltwater and concentrate in porous rock formations. An area of concentration may be called a field, a play or a pool. When viewed as a pool, the effect is similar to property owners who own a private lake. Everyone who owns part of that lake is considered as being entitled to payment for their share, regardless of where the water is taken out. There is no need to drill a hole or run a pipeline to each and every landowner. Under special conditions, the West Virginia Oil and Gas Division can be requested to determine the size of pools (up to 640 acres). If a 500-acre pool is required, each and every mineral owner in the 500 acres is included, even those with small acreage. Someone with 100 acres in the pool is paid royalty on 20 percent of what the well produces. New technology allows harvesting of pools much larger than in the past.

Suppose an area of 2,000 acres has a pool of gas a mile below the surface, and it's economical to drill a hole for every 100 acres. The 20 wells would occur on the larger tracts of land, 80 acres and above. Under rule of capture, small landowners will be left out. With up to 20 different gas companies operating those wells, it would be difficult to determine which one is responsible for any underground leaks or spillage from trucks. If each well site disturbs two acres and the road to each drill site disturbs three acres, then a total of 100 acres will be disturbed. There will be 20 pipelines crossing perhaps 20 or more landowners, creating disturbance on another 100 acres.

If developed under a 2,000-acre pooling clause in the law, a company owning 60 percent of the leases would be required to obtain the other 40 percent. Companies who own 40 percent or less of the leases would be required to give up their leases or assign them to the company that has 60 percent. Landowners whose leases were dropped or had acreage too small for gas companies to consider drilling a well, become part of the pool at the prevailing rate. Just one vertical drill hole would be drilled to the pool a mile below the surface. From there, horizontal drilling out to the rest of the 2,000-acre pool opens it to extraction. Since all of the gas comes up through just one vertical drill hole, instead of 20, a company will spend more money on that one drill hole to insure there is no loss of gas or chemicals. Therefore, finding ways to facilitate this approach is an important first step to prevent pollution.

Companies could be encouraged to run five vertical wells to one drill site. One vertical hole would be drilled straight down to the gas bearing formation. Four could be drilled at an angle to the formation to allow more horizontal drilling. This would allow for pooling of up to 10,000 acres. If 10 wells are brought to one drill site, it is possible to pool 20,000 acres. Thus only one drill site is needed for 20,000 acres, instead of 200.

At each well, saltwater rises with the gas and is separated at the surface. If one well has a short life of production, it can be used for disposal of saltwater from the other nine wells. This option eliminates the need to truck saltwater to a treatment facility, thus eliminating spillage and inadequate treatment.

So if lawmakers are serious about minimizing risks to water sources and disturbance to the surface, they will make pooling easier and increase the max of 640 acres to 20,000 acres for formations that are a mile or more below the surface. However, lawmakers may pass feel-good measures that interfere with pooling and precipitate problems. If so, they will miss a great opportunity to pioneer a better way.

Beckerle is president of the West Virginia Native Plant Society, which seeks to minimize surface disturbance.

THE STATE JOURNAL:

New Martinsville May Reconsider Ban on Drilling

Posted Friday, July 29, 2011 ; 11:28 AM
Updated Friday, July 29, 2011; 12:43 PM

Issue to be Discussed at Aug. 1 Council Meeting

By Mike Ruben

New Martinsville is seeing both sides of the Marcellus shale phenomenon.

The influx of natural gas workers fills the motels and keeps the restaurants busy in the Wetzel County town. Some residents complain, though, about being exposed to increased traffic, damaged roads and concerns about the quality of their water supply.

Council reacted to the situation on July 6 by banning drilling within city limits. Mayor Lucille Blum said, however, she is willing to continue discussing the situation.

"The city has a major concern about its water supply," said Blum, noting its dependence on wells, not the Ohio River. "We have scheduled a meeting with Chesapeake. I don't know what the results of that will be, but we are not closing the door on discussion."

The ban drew a strong response from the executive director of the Wetzel County Convention and Visitor's Bureau. Sandy Hunt's email shared with members of the Wetzel County Chamber of Commerce expressed her fear that those in the natural gas industry will boycott the community. Hunt asked members of the business community to attend the Aug. 1 council meeting.

"I have spoken with several business owners who are opposed to this ban on oil and gas drilling and we believe there are viable alternatives to an absolute ban on drilling," the email stated. "I do not want to see the oil and gas industry boycott shopping at businesses in New Martinsville...They don't have to shop and live here because there are plenty of other communities that would be happy at the chance for some prosperity."

She also wants council to rescind an ordinance restricting RV campers in the city to 14 days per year. Some Marcellus shale field workers are using recreational vehicles for temporary housing.

Chamber President Don Riggensbach said he is hopeful that a compromise can be reached.

"We need to think of the repercussions to businesses which might suffer," said Riggensbach, who owns a flooring business. "We're a small community, and we need all the economic help we can get. Council is not on the same line of thinking. They heard some complaints and I think they went too far, too fast.

"I hope we can right it in such a way that we can compromise," he added. "I hope there is some ground where the business community can benefit, as well as dealing with concerns about the water table, road conditions and beautification."

Pennsylvania American Water resolves musty odor, bad taste

By Andrew Conte and Mandy Hofmockel
PITTSBURGH TRIBUNE-REVIEW
Monday, August 1, 2011

So far this summer, drinking water from the Monongahela River has remained clear of musty odors and tastes.

Pennsylvania American Water officials said they are better prepared this time to deal with the problem if it returns, even if they still don't know the cause. Many of the company's 215,000 customers complained about the smell and taste of their water late last summer.

"It created a scenario that threw us some curveballs when it came to monitoring the quality of our source water," spokesman Gary Lobaugh said.

In the past year, the company has formed the Monongahela River Users Group to share information about the water, increased monitoring and put measures in place to reduce the effects. Even so, officials said, they do not know whether the problem will return.

"The river is very dynamic," said Ron Bargiel, Pennsylvania American's water quality manager. "It's evolving. Things are constantly changing."

The taste and odor came from two compounds: geosmin, which gives soil its earthy smell, and the organic chemical MIB, or 2-methylisoborneol. The water remained safe to drink, but some customers were worried. Scientists put much of the blame on a blue-green algae bloom in the river but never identified the exact source or its cause, Bargiel said.

Several possible triggers occurred last summer, Lobaugh said, including hot, dry weather; dredging by the Army Corps of Engineers; and the presence of total dissolved solids from agricultural runoff, acid mine drainage and shale gas drilling.

Since then, the gas industry has largely stopped sending its used water to treatment plants or waterways, said Kathryn Klaber, executive director of the Marcellus Shale Coalition, a trade group. Almost all of the water now gets reused or is sent to deep injection disposal wells below ground.

"We are so far along from even a year ago," Klaber said.

Members of the river users group, meanwhile, have been meeting quarterly since September. The state Department of Environmental Protection updates members on the latest river data and regulations, said Ron Schwartz, assistant regional director.

"It's a very complex river system, so it constantly needs attention," Schwartz said.

The group allows parties interested in the river to compare information to determine trends, said Corps of Engineers spokesman Jeff Hawk. The corps controls reservoirs that provide water to the Monongahela River for navigation and pollutant mitigation.

Water companies have taken steps to prepare in case the compounds return, Schwartz said.

Pennsylvania American discovered a naturally occurring bacteria that seems to eat the compounds when they come into its filtration system, and it has found more effective powdered activated carbons to add to the water to remove the unpleasant smell and taste.

The company also hopes to identify the source of the problem, Bargiel said.

"With the monitoring we have now, I think we'll have a better handle on future events," he said.

Andrew Conte and Mandy Hofmockel can be reached at andrewconte@tribweb.com or 412-320-7835.

----- Original Message -----

From: [Debbie Borowiec](#)
To: dsborowiec@aol.com
Sent: Sunday, July 31, 2011 5:16 PM
Subject: New Report Reveals Toxic Air Near Natural Gas Operations

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Subject: New Report Reveals Toxic Air Near Natural Gas Operations

El Cerrito, CA-- Citizen sampling of air quality near natural gas production facilities has identified highly unsafe levels of toxic chemicals near homes, playgrounds, schools and community centers in Colorado and New Mexico. A new report issued by Global Community Monitor, *GASSED!_Citizen Investigation of Toxic Air Pollution from Natural Gas Development*, details the air sampling results, environmental and public health threats with living amid the natural gas boom.

<http://www.gcmonitor.org/article.php?id=1339>